

Patrick Vegetation Management Project

Roads-related Project Design Criteria

Road Maintenance and Reconstruction Design Criteria

The intent of this document is to identify maintenance and reconstruction activities that likely will take place at various locations across the project area.

No new permanent system roads are planned in the project area.

Road maintenance will occur on most open roads in the planning area with maintenance also occurring on stored roads that access designated treatment areas. Proper road maintenance using nationally accepted Best Management Practices has a positive impact on the safety, drivability, and efficiency of the transportation system, as well as providing significant reduction to sedimentation of nearby waterways.

Typical road maintenance activities that can be expected across the planning area include the replacement of existing culverts; cleaning road drainage features including ditches, culverts, and dips; full depth reconditioning of the road prism; road base stabilization; fill slope stabilization; clearing and brushing of the existing right of way; grubbing of stumps within the travel way; road grading; and placing new road surface aggregate. Other activities will be considered where potential for sediment delivery to nearby stream courses is considered likely and unacceptable including: rocking ditches, catch basins and culvert outlets; installing new drainage features including culverts and drainage dips (surface cross drains); and roughening lead out ditches with slash. Generally, maintenance activities do not increase the footprint of the existing infrastructure and are only utilized to restore infrastructure to applicable safety and hydrologic standards. Culvert replacements that fall into the maintenance category may be performed on both ditch relief culverts and stream crossing culverts where the new culvert and associated disturbance is substantially similar to the culvert being replaced and not subject to fish passage design. One example of this is where an existing culvert is structurally at the end of its life, but as far as size and alignment are concerned, the culvert satisfies current standard. However, change in size and alignment of a culvert do not necessarily move the activity from maintenance to reconstruction, but rather should be evaluated based on the question of whether the replacement creates new disturbance.

Some road maintenance activities will rise to the level of reconstruction in the project area. These activities will vary by site. With minimal historic maintenance of the transportation system, some segments have fallen into such disrepair that the only option for remediation is reconstruction. Most reconstruction activities will remain in the existing footprint of the original improvement and are very similar to maintenance activities. Typical reconstruction activities may include the following:

1. *Replacement of stream crossing structures including major culverts and bridges.* If after inspection, culverts/bridges are not deemed suitable for commercial haul, public traffic, aquatic passage or any combination thereof, replacement of the infrastructure in question may be completed to the applicable safety, environmental and aquatic passage standards. A multidisciplinary team of specialists made up of an engineer, a fisheries biologist, a hydrologist and an archaeologist will develop a site-specific design for stream crossings that are proposed for replacement. In all cases, structures being replaced will meet AASHTO (American Association of State Highway Transportation Officials) and USFS R6 Aquatic Passage Design Criteria. This activity differs from replacement of existing culverts under the

maintenance section of this document in that structures covered by this section may be substantially upgraded and/or realigned and likely include a larger disturbance footprint.

2. *Minor realignment of less than 0.5 miles in length of existing road where significant safety, transportation, or hydrologic concerns exist.* Minor realignment consists of moving a segment of the existing road template the minimum distance necessary to mitigate the safety, transportation, or hydrologic concern. Realignments will be designed to meet the design standard of the level of road in question. Hydrologic concerns could include but are not limited to the following examples: Road located in Riparian Management Area where either horizontal or vertical movement of the stream is producing serious erosion effects on the road template; Road located in gully/low spot where seasonal runoff concentrates in the road prism and creates a public safety, road maintenance, and sedimentation problem; Road located in active landslide where additional use of the existing template could endanger public safety and natural resources. Some examples of transportation and safety related concerns that could lead to realignment of road segments are proximity to unstable hillslopes, current location does not provide for inter-visible turnouts or other sight distance issues, road segment is too steep for safe maneuverability by design vehicle. The preceding examples are not an exhaustive list. In cases where realignment is prescribed, the realignment activity will be designed to limit new disturbance to the extent practical.

Curve widening may occur to mitigate site distance safety concerns or to allow commercial traffic to safely navigate a corner. Curve widening typically entails removing material from the inside corner of a curve to provide additional site distance, wheel tracking and/or escape space. Typically this treatment is utilized only on the open road system in areas where the interface of public and commercial traffic creates an unacceptable risk. However, in some cases, this treatment may be called out on a stored road where navigation of the corner in question is not feasible without geometric alteration. This treatment will be limited to approximately 500 CY or less of material removal per treated site.

All road maintenance and reconstruction activities will adhere to National Best Management Practices for Water Quality on National Forest System Lands (BMPs). BMPs that are specific to this project are Road-3 Road Construction and Reconstruction, Road-4 Road Operations and Maintenance, Road-7 Stream Crossings, Road-9 Parking and Staging Areas, and Road-10 Equipment Refueling and Servicing. All in-stream work that takes place within 0.25 miles of occupied fish habitat will occur during the in-stream work window as suggested by Oregon Department of Fish Wildlife.

Roadside Hazard Trees - Danger trees (standing trees that present a hazard to people due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stem, or limbs and the direction of the lean of the tree would allow that tree to reach the roadway if it fell) would be cut along all haul roads (approximately 15 trees/mi). If the trees are within no-activity RHCA buffers as described previously or needed to meet down wood requirements they would be cut and left on site. If they are outside of those areas or not required to be retained for other resource needs and are of commercial value, they may be removed with this project.

Right-of-Way (ROW) – ROW access will be acquired where privately owned roads on private lands adjacent to the project area are utilized to facilitate logging, fuel reduction activities and other project related activities. Where short term access is required but access is not going to be needed in the long term, a temporary road use permit may be acquired. If the road is needed for public access and future management, easement acquisition will be pursued. More specific information where right of way, either

temporary or permanent, is needed will be provided as alternatives are developed during the NEPA process.

Rock and Water Sources – Rock quarries and water sources will be utilized throughout project implementation. These sources are scattered across the project area. These sources will be identified and discussed more specifically as the project alternatives are developed.